
EXIT

1
00:00:06,960 --> 00:00:12,150
this week at nasa

2
00:00:16,310 --> 00:00:14,230
outside the international space station

3
00:00:18,950 --> 00:00:16,320
expedition 35 flight engineers chris

4
00:00:21,429 --> 00:00:18,960
cassidy and tom marshburn of nasa

5
00:00:24,230 --> 00:00:21,439
conducted a 5-hour 30-minute spacewalk

6
00:00:26,550 --> 00:00:24,240
on the station's p6 truss to replace a

7
00:00:28,390 --> 00:00:26,560
suspect pump controller box which

8
00:00:30,470 --> 00:00:28,400
distributes coolant to the station's

9
00:00:32,950 --> 00:00:30,480
thermal control system the quick

10
00:00:35,110 --> 00:00:32,960
turnaround spacewalk was mounted just 48

11
00:00:36,790 --> 00:00:35,120
hours after an ammonia coolant lake

12
00:00:38,950 --> 00:00:36,800
developed on p6

13
00:00:41,110 --> 00:00:38,960

after installing the spare pump power

14
00:00:43,430 --> 00:00:41,120
was turned on and the system appeared to

15
00:00:45,590 --> 00:00:43,440
be working properly with no indications

16
00:00:47,110 --> 00:00:45,600
of ammonia leaking from the pump

17
00:00:49,750 --> 00:00:47,120
it's going to take some time it'll take

18
00:00:52,709 --> 00:00:49,760
some weeks for us to look at the system

19
00:00:55,110 --> 00:00:52,719
evaluate the system and and make sure we

20
00:00:56,630 --> 00:00:55,120
we did indeed stop the leak with the

21
00:00:58,069 --> 00:00:56,640
crew that we had

22
00:00:59,270 --> 00:00:58,079
they'd actually been out to this work

23
00:01:00,790 --> 00:00:59,280
site together

24
00:01:02,229 --> 00:01:00,800
on a previous shuttle mission so a lot

25
00:01:04,390 --> 00:01:02,239
of things worked in our favor to be able

26
00:01:06,310 --> 00:01:04,400
to pull this spacewalk together the

27
00:01:09,030 --> 00:01:06,320
spacewalk was the fourth for both

28
00:01:11,510 --> 00:01:09,040
cassidy and marshburn and the 168th

29
00:01:12,950 --> 00:01:11,520
spacewalk in support of station assembly

30
00:01:14,950 --> 00:01:12,960
and maintenance

31
00:01:17,270 --> 00:01:14,960
marshburn will return to earth monday

32
00:01:19,830 --> 00:01:17,280
night u.s time with expedition 35

33
00:01:21,910 --> 00:01:19,840
commander chris hadfield and cosmonaut

34
00:01:25,510 --> 00:01:21,920
roman romanenko in their soyuz

35
00:01:29,590 --> 00:01:27,429
nasa administrator charlie bolden

36
00:01:31,670 --> 00:01:29,600
delivered opening remarks at the humans

37
00:01:34,390 --> 00:01:31,680
to mars summit at george washington

38
00:01:37,510 --> 00:01:34,400

university the three-day event held by

39
00:01:39,990 --> 00:01:37,520
explore mars and gw's space policy

40
00:01:42,149 --> 00:01:40,000
institute provided a forum for nasa and

41
00:01:44,630 --> 00:01:42,159
the space community to discuss technical

42
00:01:46,950 --> 00:01:44,640
scientific and policy-related challenges

43
00:01:49,190 --> 00:01:46,960
associated with sending humans to mars

44
00:01:51,510 --> 00:01:49,200
by the 2030s there are technological

45
00:01:52,870 --> 00:01:51,520
gaps to sending humans to an asteroid

46
00:01:55,270 --> 00:01:52,880
and to mars

47
00:01:57,590 --> 00:01:55,280
and so every single

48
00:01:59,429 --> 00:01:57,600
moment of our time and every single

49
00:02:01,429 --> 00:01:59,439
dollar of our assets

50
00:02:03,749 --> 00:02:01,439
must be dedicated to developing those

51
00:02:05,830 --> 00:02:03,759
technologies that allow us to go beyond

52
00:02:08,070 --> 00:02:05,840
low earth orbit also discussed the

53
00:02:10,229 --> 00:02:08,080
planned nasa initiative to send humans

54
00:02:12,390 --> 00:02:10,239
to an asteroid and the importance of

55
00:02:14,150 --> 00:02:12,400
work by astronauts during long-duration

56
00:02:16,390 --> 00:02:14,160
missions aboard the international space

57
00:02:18,710 --> 00:02:16,400
station while not specifically designed

58
00:02:20,550 --> 00:02:18,720
to send humans to mars these endeavors

59
00:02:22,869 --> 00:02:20,560
will provide invaluable experience

60
00:02:24,630 --> 00:02:22,879
useful in planning and completing a

61
00:02:26,550 --> 00:02:24,640
successful human journey to the red

62
00:02:28,150 --> 00:02:26,560
planet also we need to think about what

63
00:02:30,070 --> 00:02:28,160

we carry in terms of medical equipment

64
00:02:32,710 --> 00:02:30,080
for the crew other things along those

65
00:02:35,110 --> 00:02:32,720
lines so we get a chance to experience a

66
00:02:37,670 --> 00:02:35,120
different risk environment where we have

67
00:02:39,190 --> 00:02:37,680
you know a protracted return capability

68
00:02:40,309 --> 00:02:39,200
back to the earth and i think that's

69
00:02:43,030 --> 00:02:40,319
what we're going to have to do as we go

70
00:02:48,229 --> 00:02:45,830
sky lab the nation's first space station

71
00:02:51,589 --> 00:02:48,239
launched the board of saturn 5 rocket 40

72
00:02:53,430 --> 00:02:51,599
years ago on may 14 1973

73
00:02:55,589 --> 00:02:53,440
the three crews that completed missions

74
00:02:57,670 --> 00:02:55,599
aboard the experimental facility not

75
00:03:00,309 --> 00:02:57,680
only set successive new records for long

76
00:03:03,110 --> 00:03:00,319
duration space flight but also completed

77
00:03:05,030 --> 00:03:03,120
about 300 experiments covering physical

78
00:03:07,670 --> 00:03:05,040
and biomedical science and earth and

79
00:03:09,190 --> 00:03:07,680
space applications the skylab program

80
00:03:11,110 --> 00:03:09,200
also yielded knowledge that was

81
00:03:13,190 --> 00:03:11,120
eventually used in development of the

82
00:03:15,830 --> 00:03:13,200
international space station just as the

83
00:03:17,750 --> 00:03:15,840
work being performed on the iss now is

84
00:03:19,750 --> 00:03:17,760
helping nasa develop new missions that

85
00:03:23,350 --> 00:03:19,760
will extend our reach farther into the

86
00:03:25,030 --> 00:03:23,360
solar system as humans move outward into

87
00:03:26,229 --> 00:03:25,040
deeper space exploration we'll probably

88
00:03:28,470 --> 00:03:26,239

learn things that we weren't expecting

89
00:03:32,229 --> 00:03:28,480
to learn just as we did in sky lab in

90
00:03:34,149 --> 00:03:32,239
iss and the next things we do will be

91
00:03:37,030 --> 00:03:34,159
just as astounding as the step from

92
00:03:40,229 --> 00:03:37,040
skylab to iss is after the final crew

93
00:03:42,390 --> 00:03:40,239
left skylab in february 1974

94
00:03:47,670 --> 00:03:42,400
the empty spacecraft circled the earth

95
00:03:52,869 --> 00:03:50,070
during a nasa tv and flight event on may

96
00:03:55,030 --> 00:03:52,879
7th expedition 35 flight engineer tom

97
00:03:56,710 --> 00:03:55,040
marshburn of nasa discussed the work

98
00:03:58,390 --> 00:03:56,720
being done on the international space

99
00:04:00,309 --> 00:03:58,400
station with members of the senate

100
00:04:02,550 --> 00:04:00,319
committee on commerce science and

101
00:04:03,670 --> 00:04:02,560
transportation subcommittee on science

102
00:04:06,309 --> 00:04:03,680
and space

103
00:04:08,309 --> 00:04:06,319
chaired by florida's senator bill nelson

104
00:04:10,309 --> 00:04:08,319
the subcommittee conducts oversight of

105
00:04:12,309 --> 00:04:10,319
nasa and several other science and

106
00:04:13,750 --> 00:04:12,319
technology related agencies can you

107
00:04:16,310 --> 00:04:13,760
explain how

108
00:04:18,390 --> 00:04:16,320
you know u.s private space companies uh

109
00:04:19,349 --> 00:04:18,400
are using the iss as a technology

110
00:04:21,590 --> 00:04:19,359
platform

111
00:04:23,510 --> 00:04:21,600
if they can do it that is

112
00:04:25,510 --> 00:04:23,520
an incredibly impressive technology

113
00:04:27,510 --> 00:04:25,520

demonstration going into space is not

114
00:04:29,270 --> 00:04:27,520
easy they're coming up with great

115
00:04:31,350 --> 00:04:29,280
efficiencies great new technologies

116
00:04:32,870 --> 00:04:31,360
built on what nasa's already done so

117
00:04:34,950 --> 00:04:32,880
that they can get probably cheaper

118
00:04:37,430 --> 00:04:34,960
better faster get things up to the space

119
00:04:39,830 --> 00:04:37,440
station the scheduled may 14th return to

120
00:04:41,990 --> 00:04:39,840
earth of marshburn and expedition 35

121
00:04:44,310 --> 00:04:42,000
crewmates chris hadfield of the canadian

122
00:04:46,469 --> 00:04:44,320
space agency and roman romanenko of the

123
00:04:48,629 --> 00:04:46,479
russian federal space agency marks the

124
00:04:52,310 --> 00:04:48,639
completion of their five-month mission

125
00:04:57,350 --> 00:04:54,230
meanwhile the next crew headed to the

126
00:04:58,710 --> 00:04:57,360
space station expedition 3637 soyuz

127
00:05:01,110 --> 00:04:58,720
commander if you order your chicken of

128
00:05:03,749 --> 00:05:01,120
the russian federal space agency nasa

129
00:05:05,830 --> 00:05:03,759
flight engineer karen nyberg and flight

130
00:05:08,070 --> 00:05:05,840
engineer luca parmitano of the european

131
00:05:10,230 --> 00:05:08,080
space agency fielded questions from the

132
00:05:12,230 --> 00:05:10,240
news media as part of their pre-launch

133
00:05:15,029 --> 00:05:12,240
activities at the gagarin cosmonaut

134
00:05:16,870 --> 00:05:15,039
training center in star city russia

135
00:05:19,749 --> 00:05:16,880
the crew is scheduled to travel to the

136
00:05:21,590 --> 00:05:19,759
kazakhstan launch site may 16th to

137
00:05:23,990 --> 00:05:21,600
complete training in advance of its

138
00:05:26,390 --> 00:05:24,000

launch to the station on may 29th local

139
00:05:29,590 --> 00:05:28,150
after being incommunicado with the

140
00:05:32,310 --> 00:05:29,600
ground during the recent solar

141
00:05:34,390 --> 00:05:32,320
conjunction the mars curiosity rover is

142
00:05:36,550 --> 00:05:34,400
preparing to get back to wheeling around

143
00:05:39,029 --> 00:05:36,560
the red planet and thanks to a software

144
00:05:41,270 --> 00:05:39,039
update the rover now has the ability to

145
00:05:43,909 --> 00:05:41,280
navigate more on its own

146
00:05:46,230 --> 00:05:43,919
the new autonomous navigation capability

147
00:05:49,110 --> 00:05:46,240
or auto nav enables the rover to

148
00:05:51,110 --> 00:05:49,120
evaluate and select safe paths of travel

149
00:05:53,749 --> 00:05:51,120
with less input from the rover team on

150
00:05:55,749 --> 00:05:53,759
the ground curiosity also received a

151
00:05:57,909 --> 00:05:55,759
software update to prevent the sensitive

152
00:06:00,870 --> 00:05:57,919
telescopic eye of the chem cam

153
00:06:02,950 --> 00:06:00,880
instrument from being burned by the sun

154
00:06:05,350 --> 00:06:02,960
the update is designed to make sure kim

155
00:06:06,950 --> 00:06:05,360
kam's eye is never pointed directly at

156
00:06:09,110 --> 00:06:06,960
the sun

157
00:06:10,710 --> 00:06:09,120
and the rover team is also confirming

158
00:06:12,950 --> 00:06:10,720
the calibration of curiosity's

159
00:06:14,390 --> 00:06:12,960
navigation cameras before driving to a

160
00:06:16,390 --> 00:06:14,400
new location

161
00:06:18,790 --> 00:06:16,400
plans are in the works for a short drive

162
00:06:20,469 --> 00:06:18,800
to a new drill site called cumberland

163
00:06:22,950 --> 00:06:20,479

about nine feet west of where

164
00:06:26,790 --> 00:06:22,960
curiosity's drill first touched martian

165
00:06:31,350 --> 00:06:29,189
a new google earth engine time lapse

166
00:06:34,550 --> 00:06:31,360
made from landsat satellite imagery

167
00:06:37,749 --> 00:06:34,560
captures the rapid growth from 1984 to

168
00:06:39,749 --> 00:06:37,759
2012 of las vegas nevada the fastest

169
00:06:41,189 --> 00:06:39,759
growing city in the u.s over the past

170
00:06:42,870 --> 00:06:41,199
two decades

171
00:06:45,510 --> 00:06:42,880
each frame of the time lapse is

172
00:06:48,950 --> 00:06:45,520
constructed from a year of landsat data

173
00:06:50,309 --> 00:06:48,960
and equates to about a 1.7 terapixel

174
00:06:52,390 --> 00:06:50,319
snapshot

175
00:06:55,189 --> 00:06:52,400
jointly managed by nasa and the u.s

176
00:06:57,270 --> 00:06:55,199
geological survey the landsat program

177
00:07:00,550 --> 00:06:57,280
has acquired images of the earth's

178
00:07:02,150 --> 00:07:00,560
surface since 1972 providing critical

179
00:07:04,150 --> 00:07:02,160
scientific information about our

180
00:07:10,309 --> 00:07:04,160
changing planet the time lapse is

181
00:07:16,070 --> 00:07:11,670
intro

182
00:07:21,670 --> 00:07:19,189
these bugs flightless fruit flies may

183
00:07:22,870 --> 00:07:21,680
someday help make airplanes more fuel

184
00:07:24,469 --> 00:07:22,880
efficient

185
00:07:26,550 --> 00:07:24,479
their work starts in a wind tunnel at

186
00:07:28,710 --> 00:07:26,560
nasa's langley research center where

187
00:07:30,629 --> 00:07:28,720
technicians install the edge of a wing

188
00:07:33,029 --> 00:07:30,639

that's covered with a special coating

189
00:07:35,510 --> 00:07:33,039
the task is to

190
00:07:37,510 --> 00:07:35,520
design a surface that prevents insect

191
00:07:39,350 --> 00:07:37,520
residues from sticking okay and the

192
00:07:41,589 --> 00:07:39,360
reason is

193
00:07:44,469 --> 00:07:41,599
that if you have any residue sticking it

194
00:07:47,029 --> 00:07:44,479
trips the airflow over it rough airflow

195
00:07:49,029 --> 00:07:47,039
increases airplane fuel usage as much as

196
00:07:51,270 --> 00:07:49,039
30 percent says nasa's environmentally

197
00:07:52,790 --> 00:07:51,280
responsible aviation project between the

198
00:07:55,189 --> 00:07:52,800
commercial coatings we've looked at and

199
00:07:57,350 --> 00:07:55,199
new coatings or and surfaces that we've

200
00:07:59,270 --> 00:07:57,360
engineered and modified we've looked at

201
00:08:02,710 --> 00:07:59,280
about 60 different

202
00:08:04,309 --> 00:08:02,720
surfaces for the bugs it's up close

203
00:08:07,430 --> 00:08:04,319
they're launched at the coated wing at

204
00:08:09,749 --> 00:08:07,440
about 150 miles an hour the researchers

205
00:08:10,710 --> 00:08:09,759
goal to narrow the field of coatings to

206
00:08:12,629 --> 00:08:10,720
a few

207
00:08:20,629 --> 00:08:12,639
that are effective enough to test on an

208
00:08:26,710 --> 00:08:23,990
it was ready set soar at the 2012-2013

209
00:08:29,110 --> 00:08:26,720
nasa student launch projects challenge

210
00:08:31,029 --> 00:08:29,120
more than 600 students launched rockets

211
00:08:33,269 --> 00:08:31,039
of their own design complete with

212
00:08:35,269 --> 00:08:33,279
working science or engineering payloads

213
00:08:40,870 --> 00:08:35,279

at the event sponsored by marshall space

214
00:08:45,110 --> 00:08:42,790
the goal was to see which rocket could

215
00:08:47,430 --> 00:08:45,120
come closest to the one mile mark and

216
00:08:49,910 --> 00:08:47,440
safely return its payload to earth of

217
00:08:52,389 --> 00:08:49,920
the 54 teams that participated 10

218
00:08:54,790 --> 00:08:52,399
received preliminary awards the grand

219
00:08:57,509 --> 00:08:54,800
prize of five thousand dollars from atk

220
00:08:59,509 --> 00:08:57,519
aerospace group will be awarded may 17th

221
00:09:02,150 --> 00:08:59,519
after final post flight analysis and

222
00:09:03,509 --> 00:09:02,160
reviews are complete

223
00:09:05,190 --> 00:09:03,519
three

224
00:09:06,150 --> 00:09:05,200
two

225
00:09:08,710 --> 00:09:06,160
one

226
00:09:13,110 --> 00:09:08,720
roger have left off and the clock is

227
00:09:15,030 --> 00:09:13,120
operating on may 15 1963 mercury atlas 9

228
00:09:17,430 --> 00:09:15,040
the final manned space mission of the

229
00:09:19,590 --> 00:09:17,440
u.s mercury program launched from cape

230
00:09:21,990 --> 00:09:19,600
canaveral florida roger you're looking

231
00:09:25,430 --> 00:09:22,000
beautiful on board the spacecraft named

232
00:09:27,430 --> 00:09:25,440
faith 7 was astronaut gordon cooper

233
00:09:29,430 --> 00:09:27,440
despite technical problems near the end

234
00:09:31,990 --> 00:09:29,440
of the flight cooper and faith 7

235
00:09:33,829 --> 00:09:32,000
completed 22 orbits of earth and

236
00:09:35,350 --> 00:09:33,839
splashed down safely in the pacific

237
00:09:38,070 --> 00:09:35,360
ocean

238
00:09:40,070 --> 00:09:38,080

and that's this week at nasa for more on

239
00:09:42,949 --> 00:09:40,080
these and other stories or to follow us